Orange County Fire Rescue Department Strategies for Retaining Institutional Knowledge

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:_____

Abstract

Orange County Fire Rescue Department (OCFRD) is transitioning through a retirement phase; the department is transitioning into a younger department with less experience. The primary concern is the transition is contributing to a loss of institutional knowledge that may negatively impact fire ground operations.

This descriptive research was conducted to seek a process to stop the loss of institutional knowledge which can help prevent injuries and fatalities.   The research contains different methods of knowledge retention by outside agencies, different fire departments and Orange County Fire Rescue.

1. How has the private industry addressed the loss of institutional knowledge due to the retirement of experienced employees?

2. How have other fire departments addressed the loss of institutional knowledge due to retirement of experienced firefighters?

3. What type of critical knowledge is lost through OCFRD's retirement phase?

4. What are the potential effects to OCFRD due to the loss of this knowledge?

As history is scarred with repetition of events, OCFRD must also acknowledge the past losses. OCFRD has experienced "Line of Duty Deaths" due to a roof collapse of a fire structure. A key issue that lead up to this tragic event, per the investigator, was the lack of experience by the personnel. Although the only person who has the experience can retain it, it is up to others to retain some of the knowledge that person is able to share.

This research has revealed some methods of retention that are currently being utilized. The problem with the current methods is the personnel do not recognize it is available for use and it is not readily accessible for use. And thus, recommendations are made to improve on the retention

of knowledge by increasing what is recorded, how it is recorded as well as improving access to

the information.

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Introduction

Problem Statement

Orange County Fire Rescue Department (OCFRD) is transitioning through a retirement phase contributing to a loss of institutional knowledge that may negatively impact fire ground operations.

Purpose

The purpose of this research is to identify strategies and methods to retain the institutional knowledge that is lost as a result of retirement within OCFRD.

Research Method

The descriptive style research method will be used for this applied research project (ARP).The research will describe the current methods used to pass on the knowledge, both within the organization as well as other organizations. Also included will be background research of historical data concerning OCFRD's experience levels over a ten-year period.

1. How has the private industry addressed the loss of institutional knowledge due to the retirement of experienced employees?

2. How have other fire departments addressed the loss of institutional knowledge due to retirement of experienced firefighters?

3. What type of critical knowledge is lost through OCFRD's retirement phase?

4. What are the potential effects to OCFRD due to the loss of this knowledge?

Background and Significance

Orange County Florida spans approximately nine hundred seven square miles of the Central Florida area. In Orange County, there are nine municipalities and one special taxing district, Reedy Creek / Disney World. The population of Orange County is estimated to be just over 1 million citizens. Inside the county also resides tourist attractions such as Sea World and Universal Studios, along with a tourist area called International Drive, also referred to a the I – Drive corridor. The Orange County Convention Center is the second largest convention center in the nation. Thus, the population on a daily basis can vary greatly.

Orange County Fire Rescue Department is a full time career fire service department. It is approximately the twenty-eighth largest department in the nation and fourth largest in the state. OCFRD has also achieved an Excellence Award from the International Association of Fire Chiefs for the department's Wellness Program. The department prides itself in providing the best for its firefighters.

The department's pride is evident through its commitment to follow the National Institute for Occupational Safety and Health's (NIOSH) "Recommendations for Preventing Fatalities Related to Medical Conditions" and Recommendations for Preventing Fatalities Related to Trauma". The recommendations by NIOSH include medical screening, fitness and wellness, Standard Operating Procedures (SOPs), Incident Command, motor vehicle, personal protective equipment, rapid intervention teams, and staffing requirements (National Institute for Occupational Safety and Health [NIOSH], 2008).

Orange County Fire Rescue follows these recommendations by:

1. Providing a full medical screening for all of its employees on an annual basis.

2. Providing new and maintained exercise equipment in all the fire stations.

3. Maintaining SOPs that reviewed on a set basis as well as changed on an as need basis.

4. Training communications to be clear, concise and of normal language.

5. Training and use of the Incident Command on every multi-unit response.

6. Motor Vehicle training is conducted on a bi-annual basis.

7. Inspecting and servicing all personal protective equipment on both a regular and as need basis.

8. Rapid intervention teams (RIT) are established for every incident that has a dangerous atmosphere. Training for the RIT has also been established and provided on a regular basis.

9. Staffing has been steadily increased over the years. A majority of the engine companies are now staffed with a four personnel crew.

Orange County Fire Rescue has been very proactive in training their personnel. Bi-annually, the training department leads and facilitates a structure fire with multi-company involvement. Controlled fire training is performed as per National Fire Protection Agency (NFPA) Standard 1403, Standard for Live Training Fires in Structures. The training division conducts incident command classes with scenario-based instruction for the newly promoted officers and the engineers who can ride in the capacity of an officer. The department promotes station training to meet the desired Insurance Service Organization (ISO) rating training level of twenty hours a month.

Orange County strives to exceed expectations of NFPA, Department of Labor and OSHA recommendations in order to keep the firefighters safe. The path of concern that faces OCFRD's future is the retirement phase that is creating a younger department. This increase in youth

comes with a decrease in experience. The department currently has the median longevity time of eight years with an average of eleven years of longevity. In the next three years, that mean time of longevity will be approximately ten years.

Orange County Fire Rescue has had the unfortunate experience of line of duty deaths (LODDs). In 1989, two of Orange County's firefighters died in a roof collapse. One of the firefighters was an engineer with eight years on the job, and the other was firefighter with five years experience. Many have speculated that this was due to a lack of experience; others have speculated that it was merely a mistake. The official review of procedures determined that the incident commander underestimated the scope of the fire. Regardless of how or why, the personnel need to learn from this experience and gain knowledge from the personnel on that scene. It was not until recently that a video was done about the incident. It discusses the lessons learned from it. For approximately twenty years, the lessons learned from that event were locked away in the memories of those employed during the event.

A second event occurred in 2004 where 2 Orange County firefighters found themselves trapped in a room from a roof collapse. The crew was rescued from the window without any injuries. Each firefighter had 3 and 5 years experience respectively. Roof collapses caused this department's loss of two firefighters and nearly two more. When was this lesson going to be passed on to the inexperienced?

Over the last 10 years, Orange County has also experienced a decrease in the number of structure fires. In 2000, Orange County had 296 structure fires. Last year, Orange County only had 253 structure fires. The current trend for this year is proving to be even less than last year. Therefore, the fewer actual structural fires, the less actual experience.

An OCFRD longevity requirement for the promotional opportunity to company officer is six years as a firefighter or one year as an engineer. The requirement for engineer is to have three years as a firefighter. Therefore, a company officer leading a crew at any one time can have as little as four years time in the fire service. This could lead to the inexperienced being lead by the inexperienced.

The potential effects for OCFRD's future, as asked in question 4, lies with the amount of lessons learned prior to a negative event. The concern is echoed so profoundly in Deputy Chief Vincent Dunn's book of Safety and Survival on the Fire Ground. "There are no new lessons to be learned from a firefighter's death or injury. The cause of a tragedy is usually an old lesson we have not learned or have forgotten along the way" (Dunn, 1992)

The problem faced by OCFRD related to NFA EFO Executive Development curriculum contained in Unit 7: Organizational Culture and Change. The objective contained within the unit is to "recognize the indicators that point to a legitimate need for an organization's culture to change."(Federal Emergency Management Agency [FEMA], 2006) This problem also relates to the United States Fire Administration Operational Objects by "reducing risk at the local level through prevention and mitigation." (National Fire Academy [NFA], 2009)

Literature Review

A concern that has echoed over the years and careers of firefighters is firefighter fatalities. America Burning, The Report of the National Commission on Fire Prevention and Control, completed in 1973 noted that firefighting is the most dangerous vocation, "…death rate is 15 percent greater than the next most dangerous occupation". (National Commission of Fire Prevention and Control, 1973, p. 2) The report continues by stating that the fire chiefs need to make decisions based on their training and experience.

To begin the review, the author began searching for data on fatalities and injuries as it relates to experience level of the firefighters. This research has led the author to several reports by the United States Fire Administration.

According to the United States Fire Administration, the number of firefighter fatalities has been decreasing since 1980 but the ratio of fatalities per one hundred thousand incidents has been increasing since 1995. A majority of the calls now facing fire departments are Emergency Medical Services, "between 50 and 80 percent of emergency call volume….result in only 3 percent of firefighter fatality." (United States Fire Administration [USFA], 2002)

Twenty six percent of America's firefighters are career personnel. Even though full time firefighters are only about a quarter of the number of firefighters, they actually compose thirty-three percent of firefighter fatalities. The percent of career fire departments total up to only six percent of the departments nationally. The percent of fatalities by type puts career departments at twenty eight percent. Fatalities by rank shows firefighters account for sixty percent of them and the company officers account for fifteen percent (USFA, 2002).

In Flint, Michigan on August16, 2010, a rookie firefighter falls through the floor. This was the second time firefighters had been back to this residence for a fire. A senior firefighter notices fire coming out of the front door.   The rookie initially begins to try to control the fire from outside, then decides to attempt to attack from inside. At this point, the senior firefighter advises that he yelled for the firefighter not to go in. After a couple of seconds inside the doorway, the floor gives out and the rookie falls through. The firefighter sustained second and third degree burns (Brown, 2010).

Reviewing OCFRD Incident Safety Review Reports, the author encountered an incident in which crews were too deep inside the fire structure. The initial attack crew arrived at the

house fire; pulled an attack line, and made entry in to the residence. As the crew entered, an

inspection hole was created in the ceiling to ensure that the fire was not above their heads. The

crew did not find any indications of fire in the attic. Therefore, the crew proceeded inside of the

structure. Several minutes later, another crew arrives and checks the same inspection hole to

find the opening was not completely cleared. It was noted that the insulation was still in place

blocking a clear view of the attic space. When the insulation is removed, heavy fire is found in

the attic space. The initial attack crew, now much deeper in the building had to be evacuated

(Orange County Fire Rescue [OCFRD], 2007).

Outside of the fire service, there is also a concern with the loss of experienced

employees. The private industry is also experiencing a large retirement phase. Many

organizations have been seeking a method to retain that knowledge before it is lost.

"When retirees walk out the door, they take with them everything they've learned on their

jobs. Their replacements must slowly regain the on-the-job knowledge the ex-employees spent

years accumulating." (Thilmany, 2008) The article continues to describe how there are different

methods of retaining the knowledge. Some examples of those methods were interviews with

documented recordings, "how to" videos with the employees, and mentoring.

Industry Week put out an article in 2006 about retaining knowledge of the retiring

employees. The article denotes that a study performed by Society for Human Resource

Management found that many new employees lack professionalism, communication skills and

analytical skills or business knowledge. "For manufacturers, it would behoove…before vast

amounts of knowledge is lost." (Purdum, 2006)

U.S. News and World Report discussed potential problems with Northrop Grumman.

Northrop Grumman is looking at approximately 50% of its work force being able to retire in 5 to

10 years. The approach Northrop Grumman has taken is by approaching employees nearing retirement and asking if they would coach and mentor the new employees. In return, Northrup Grumman is making the work schedule more flexible to reward the employees that remain to coach and mentor. (Brandon, 2008)

Tennessee Valley Authority (TVA) is a government agency that has recognized the potential impact from the loss of knowledge due to retirement. They have been proactive in retaining the knowledge loss, they began in 1999 working on it. They began by asking three questions:

- What knowledge is likely to be lost when particular employees leave? ("What?")
- What will be the business consequences of losing that knowledge? ("So what?")
- And what can be done to prevent or minimize the damage? ("Now what?") (Fischer, 2006).

TVA continued by creating a rating of the knowledge by the employee and their time remaining from retirement. This allowed for TVA to focus on the highest priority and begin to curtail the loss. The method they preferred was a mentoring, a newer employee was placed with a soon to be retiring employee. They were proud to advise that over the 5 years, 32% of their workforce had retired and been replaced with virtually no effect.

There are endless numbers of literature discussing the loss of experience, for example the book Workforce Crisis. This book is focused on how to over come the shortages of skills and talent facing the business world. "Even when they successfully hire and retain young workers, they are still trading experience for inexperience." The book continues discussing the effects of a changing workforce due to the diversity of skills held by the different generations, baby boomers as opposed to generation X (Dychtwald, Erickson, & Morison, 2006).

Mr. Gary Ludwig reports that mentoring does not have to be set in a formal manner. He describes how finally one day he realized that his Chief had become his mentor. He also reflects back on how much knowledge a person with thirty years or more experience has to offer others. And he closes his article offering the advice to tap into your experience and ensure that you share it (Ludwig, 2010).

Chief Eddie Buchanan discusses how the process of mentoring can begin with the inexperienced. He reports that anyone can create their own mentoring program by observing their surroundings and making mental notes. The article also stresses the need for a mentoring program, "- because it is vital for your safety and survival that you pass on what you have learned to the next generation of firefighters (Buchanan, 2007). He also warns that without seeking this information, it will leave with the retiring firefighter and be lost forever.

Fire Department of New York has a "Mentorship Team". Part of their program is to have assignments as part of their routine tour of duty. For example, to start the day there is a written problem to analyze and discuss, which the entire crew discusses the material. A final report on the resolution to the problem is turned in at the end of duty tour. The belief is that those that who participate in the program will be able to recognize problems and make decisions from their lessons and apply them, including some stressful events (Tracy, 2004).

In July 2009, Dr. Harry R. Carter wrote an article for FireHouse that discussed the transfer of knowledge. In his article he writes of his career and how knowledge was passed on and needs to be continued. He denotes that one problem of the lack of that transfer is "we expect our newer troops to automatically act and perform like we veterans do." (Carter, 2009) Dr. Carter also notes that he either acted or reacted based on the knowledge he had gained over the years.

Retired Chief Dunn of the Fire Department of New York wrote a book titled Safety and Survival on the FireGround. The book is written to help prepare the firefighters of all ranks to recognize hazards and to employ safe tactics to avoid injury and death. The most echoing point of this book reveals that deaths and injuries of firefighters have not changed, only the firefighters have changed. "There are no new causes of firefighters' death and injury; firefighters are killed and injured performing the same tasks each year." (Dunn, 1992)

Procedures

The author began the research seeking literature at the National Fire Academy Learning Resource Center, LRC. While at the LRC, multiple searches were performed throughout the electronic catalog system. The searches primarily resulted in a listing of multiple magazine articles and applied research papers (ARPs). Most articles would reference mentoring while most of the ARPs would reference succession planning. Not many books were found at the LRC that focused on the desired research.

While at the National Fire Academy, a visit was placed to the United States Fire Administration (USFA) Publications office. At the USFA publication office, the author was able to attain several published reports on fire fighter injury, death and incidents. These published reports would later be reviewed for support data on national similarities to OCFRD.

Multiple visits to local libraries would be performed to find further literature pertaining to research. Most searches would return information very similar to that already obtained. Due to the small library system locally, multiple requests were made for interlibrary loans of books.

On a daily basis, emails were received from Southeastern Association of Fire Chiefs, a division of the International Association of Fire Chiefs. These emails are titled The Daily Dispatch. Within these emails are multiple articles of fire event from a selected local region as

well as nationally. These emails were reviewed to seek out incidents that may be pertinent to this ARP.

The author sought data that would confirm the problem that OCFRD Department faces today. Thus, the author placed several requests via electronic mail (e-mail) to several internal departments for various data. The Human Resource Division for OCFRD was contacted for data pertaining to retirement and employment for a span of ten years. The OCFRD Safety Division was contacted, for data pertaining to injuries during the same period. Finally, the Fire Chief's office was requested for the fire incidents that OCFRD responded to during the last ten years.

The data received from the Fire Chief's office contained every type of incident responded to. The data was retrieved from the reporting program OCFRD used which complied with the National Incident Fire Reporting System. This program was new to OCFRD in the year 2000. The data was in spreadsheet format, which particular data had to be extracted for use. Limitations to this data revealed that no training was provided to clearly define under what category each incident should be entered.

The Human Resource Specialist and Battalion Chief of Safety replied via e-mails to request that the author meet with them for clarification of data that was requested. A scheduled time was agreed upon. At the meetings the author gave a clarification of desired data to be attained as well as the intended use of the data. Both, the Human Resource Specialist Mr. Charles Welch and Battalion Chief of Safety Joseph Washington, were able to print several data sheets that would provide the information requested.

The data sheets were reviewed and a new spreadsheet was created. The spreadsheet created was designed in such a form as to provide better clarification of the numerical data. Mr. Welch had not currently completed the information updates for retirees and new hire from the

year 2008 to the present. Therefore, the data is limited from 2000 to 2007, and partial data for 2008.

Data for injuries during emergency calls was requested from the Workmen's Compensation Coordinator, Ms. Cyndi Dennis. Ms. Dennis was able to compile the information and send it via email. The data was converted to a table. She advised that the data was only available to be retrieved for the last five years. Any further period would require extensive time to check each claim filed individually.

Through some informal conversation with OCFRD Battalion Chief Douglas Brown, the author was lead to another report comprised by the Training Division. This led to a conversation with the Administrative Assistant in Training, Mrs. Robyn Riddle about the report. She stated that she could update the report. The report contained each employee in his or her respective rank and date of hire with OCFRD as of September 2010 (see Appendix C). This data was edited to make calculations and projections.

An email was sent to FireFighterCloseCalls.com via contact information in search of more informative data. The goal was to attain data pertaining to injuries or near death incidents of firefighters during fire fighting. The data desired was a comparison of the experience level of the firefighter to emergency incidents over a ten-year period. Unfortunately, a response was given that they do not collect that type of data and that they believe to help me in my endeavors they would forward the request to Fire Department of New York (FDNY) for help. There was no response from FDNY.

Within the FireFighterCloseCalls.com website is multiple reports of emergency incidents in which events occurred that nearly resulted in death. Included information within the report is data on experience levels of the involved personnel to the incident. Multiple searches were

conducted for incidents of inexperience. These reports would further reinforce information retrieved, to include literature and procedural data.

Orange County Fire Rescue Training Division was contacted via telephone to attain a copy of the video pertaining to the two firefighter fatalities incident in the department. The training video contained details about the incident and was put together as a "lessons learned" approximately twenty years after the incident. This incident and video would provide strong reference for further inquires.

To determine what other fire departments have done to facilitate the transfer of knowledge that is being lost due to retirement, the author sent e-mails to 18 fire departments within the state of Florida (see Appendices A and B). The majority of the departments contacted were surrounding county and municipal fire departments. Replies were only received from seven of those departments. The replies were received via email, telephone conversations and meetings.

One reply was a request to formally meet with Fire Chief LeeAnne Mims of Seminole County Department of Public Safety Fire Rescue (SCDPSFR). Another meeting was with District Chief (DC) Anibal Saez concerning transferring of knowledge within Orlando Fire Department (OFD), a municipal fire department within Orange County. DC Saez of OFD, also advised of certain methods done by Phoenix Fire Department that can be brought up via the internet.

Several departments conveyed their information over the phone. Miami-Dade Fire Rescue Captain Gregory Rubin, St. Cloud Fire Rescue Fire Chief Charles Lewis, and Sanford Fire Department Fire Chief Gerard Ransom had conversations pertaining to my Executive Fire

Officer (EFO) ARP. Both Fire Chief Ransom and Cocoa Fire Department Chief Francis Murphy replied by email to my request for information.

As the author began to investigate internally about the concern, there were many informal discussions with various senior and retired officers within OCFRD.   During this internal investigation, reports conducted by OCFRD were rediscovered. OCFRD has Standard Operating Procedures (SOPs) that establish requirements for the creation of reports on certain events. These reports are Post Incidents Action (PIA), Near-Miss Reports, and Safety Bulletins.

Two questionnaires were created in SurveyMonkey.com for information on firefighter personnel's opinions (see Appendix E for example questionnaire). The questionnaires were identical with the exception, one was created for OCFRD and the other was created for outside agencies. An email was sent up to OCFRD's Fire Chief for permission to post a request for the personnel to fill out the questionnaire. Another email was sent out to all of the fire departments that were on the list of Appendix B as well as fellow Executive Fire Officers students. In this request, it was asked that they allow all of their respective department personnel to also fill this questionnaire.

The purpose of the questionnaire was to assist in confirmation of the problem statement. Also expected from this questionnaire was to compare results from OCFRD to other fire departments. Comments in the questionnaire would also be reviewed for additional resources for the ARP. Questionnaires completed by OCFRD totaled 127 of the potential over 900 certified firefighters. Total completed questionnaires from other departments totaled 37 from over 40 varying sized departments.

Deputy District Chief Steve Chikerotis of Chicago Fire Department (CFD) gave a presentation at Fire Department Safety Officers Association (FDSOA) Conference. The

presentation was titled "Learning From Our Mistakes". The presentation would further reinforce the concern of the author.

Results

1. How has the private industry addressed the loss of institutional knowledge due to the retirement of experienced employees?

Mentoring is in the forefront of methods to retain the institutional knowledge. The methods used to mentor have varied with different industry requirements. Some companies have offered flexible schedules or additional benefits to the retiring personnel to entice them to remain longer to mentor the less experience personnel. Others have proactive sought out which employees plan on retiring. When they have established the priority of retirement, they begin the mentoring with the employee prior to his expected retirement time.

Another method suggested is recording the experienced personnel perform the job and creating a "how to" multimedia. This video would be stored and used to help develop the younger employees. Additionally, some businesses seek experienced personnel to hire to help ease this loss.

2. How have other fire departments addressed the loss of institutional knowledge due to retirement of experienced firefighters?

Discussion with DC Saez of OFD revealed a "Lessons Learned Reports".   The reports are constructed in a power point presentation format that contains emergency events of large or odd type incidents. These reports contain audio, video, and data input of the incidents. First in officers, commanders, and other personnel involved in the incident add to the creation of these reports. A final analysis is performed and placed in the report that addresses both positive actions and areas in need of improvement. DC Saez also affirmed this project was a process that

was performed by OFD for knowledge retention; unfortunately, the project has stopped because of retirements (A. Saez, personal communication, August 11, 2010).

Most of the replies received from other departments have been of no formal method to retain this knowledge. Captain of Training, Gregory Rubin for Metro Dade Fire Rescue Department (MDFRD), largest department in the state of Florida, stated that there was no formal method, "… even a department of our size, as large as we are, do not have anything formal."(G. Rubin, personal communication, July 6, 2010) Fire Chief Gerard Ransom of Sanford Fire Department (SFD) advised that he had nothing formal but did add his department fosters a retiree luncheon monthly. Chief Ransom stated that some of the best ways to gain that knowledge is informally, listening to the stories from senior personnel (G. Ransom, personal communication, June 17, 2010).

Some of the departments advise that they try to focus on training to bridge this loss of experience. Captain Rubin of MDFRD advises they attempt to get senior personnel to lead the instruction of tactics classes. Chief Ransom of SFD states that they routinely perform training with current lieutenants, future lieutenants and personnel capable of riding in the position of lieutenant.

The meeting with Chief Mims of SCDPSFR occurred on August 2 at 3pm. Chief Mims advised that she could answer questions or begin to talk about the requested information in the email. The author requested that she begin and would ask questions as they went on. She went on to explain that Seminole County had gone through a very similar problem. In the midst of the conversation, she noted that the new employees do not have the "kitchen table talk anymore because so many people have left." (L. Mims, personal communication, August 2, 2010) In discussion of promotional processes, she noted that they as well, base its' qualifications off of

experience as years on not by type of experience. She clarified by describing this type of

experience would equate to how many fires the employee participated.

Chief Mims continued on to state that they have a process called a "Special Incident

Report". This report is on any incident that had a significant event. The company officer is to

fill out this report and send it out per policy to a designated list of personnel. The report contains

lessons learned within it. The purpose of the report is to pass knowledge of particular incidents

throughout the department.

Upon further investigation, the Phoenix Fire Department website was searched and found

incident reviews. These incident reviews were video format that provided information about the

incidents as well as the lessons learned. The videos contain multiple pieces of data, from radio

report to live footage to on scene personnel accounts (Phoenix Fire Department [PFD], n.d.).

3. What type of critical knowledge is lost through OCFRD's retirement phase?

Conversation with Assistant Chief of Operations Joseph Silvestris revealed that he was

the company officer of the two firefighters that were trapped in a second floor room. Chief

Silvestris advised that when he arrived at the top of the stairs, the roof had collapsed and the

force of the collapse pushed him back out of the doorway. It was at that point he thought that he

had lost his crew and began to help another crew get out of the apartment. Chief Silvestris also

advised that he had no prior knowledge about this structure's history (J. Silvestris, personal

communication, Summer, 2010).

Informal discussion with retired Lieutenant Steve Kidd about the two firefighters trapped;

reveals that the same building, years prior, that had a collapse of the same section of roof due to

a fire. Lieutenant Kidd went on to advise that a notation of the previous collapse was in the

OCFRD Safety Review. He continued by informing that there were several officers on the first

incident, which were still employed by OCFRD during time of second incident. Since the second incident, all of the officers that were at both incidents have retired (S. Kidd, personal communication, Summer, 2010).

4. What are the potential effects to OCFRD due to the loss of this knowledge?

From the OCFRD training video about the Palm Parkway incident in which the department lost 2 firefighters, it was acknowledged that experience played heavily in the tragic incident. Within the video the investigating chief, retired Deputy Chief Edwin Spahn, discussed his results. Deputy Chief Spahn concluded "…because they didn't have the experience, which is not their fault. It was the fault of others to give them the experience and the training and the ability to recognize a hazard. That this building was beyond any fire power that three firefighters…could do to put this thing to rest."

Engineer Daniel Bonaci, pumper operator on scene, uttered word that come with virtually every bad incident, "…something didn't look right". A then firefighter, now Engineer Chris Grieb, on the scene discussed the initial point of view, "…didn't seem to be that big of a deal." He now echoes "…we need to learn from our experiences and never forget."   Retired Fire Chief John Hunt states, "That situation can happen today. We can be the best trained. We can learn all the safety techniques…"

In the video, the current fire chief discussed the concern for experience. "We see a lot less fire today than we saw 20 years ago. And that means every bit of experience now is so much more critical …. Today we are 41 engine companies … 1 – 2 working fires a day when you spread that out … a lot of people don't see fire" per Fire Chief Carl Plaugher (Orange County Fire Rescue [OCFRD], 2009).

Data received from the Human Resource coordinator revealed that the department has great potential to be a young department. As noted in Table 1, the department in a span of 9 years has grown from 714 to 1003 of certified firefighters. During that span 677 certified firefighters have been hired, equating to 67.5% of the total department. That accounts for 293 new positions and replacement of 384 personnel.

Table 1

Number Certified Employees and Comparison of Experience Levels by Author

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Firefighters	714	740	774	836	886	919	934	949	1003
Hired	68	29	103	69	107	80	88	80	53
Experience Level									
%<1 year	9.52	3.92	13.31	8.25	12.08	8.71	9.42%	8.43%	5.28
%< 2 years		13.11	17.05	20.57	19.86	20.35	17.99	17.70	13.26
%< 3 years			25.84	24.04	31.49	27.86	29.44	26.13	22.03
%< 4 years				32.18	34.76	39.06	36.83	37.41	30.01
%< 5 years					42.44	42.22	47.86	44.68	40.68
%< 6 years						49.62	50.96	55.53	47.56
%< 7 years							58.24	58.59	57.83
%< 8 years								58.59	57.83
%< 9 years									60.72

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	Totals
Firefighters (All ranks)	714	740	774	836	886	919	934	949	1003	
Retired	10	16	44	29	14	22	15	24		174
Other Reasons	11	12	43	27	17	29	30	41		210
Total Left	21	28	87	56	31	51	45	65		384

NOTE: *Number Certified Employees and Comparison of Experience Levels is data retrieved of certified employees hires, left employment and total number of certified personnel. Data was used by author to evaluate experience levels during the given data timeframe.*

Injury report from Workmen's Compensation Coordinator reveals that OCFRD has been working to minimize it injuries during emergency operations. In the span of five years, the overall injuries have declined to 85 in 2009. And every category of experience level has declined over the same span.

Table 2

OCFRD Injuries During Emergency Settings

Year	Years of Service 0 - 10	Years of Service 11 – 20	Years of Service 21 – 30	Total Number of Injuries
2005	84	21	36	141
2006	74	32	29	135
2007	72	29	42	143
2008	52	25	26	103
2009	42	18	28	85

NOTE: *OCFRD Injuries During Emergency Settings is data retrieved of employees that were injured from time of response to time of return from incidents. Data was used by author to evaluate experience levels verse injury rate during the given data timeframe.*

The trend of injuries within OCFRD, Table 2, is declining much like the national trend as noted in the USFA Firefighter Fatality Report and Statistics (United States Fire Administration [USFA], n.d.). Orange County Fire Rescue's newer personnel tend to also have more injuries than the older personnel. Nationally, the younger firefighters tend to have more traumatic deaths on firegrounds than the older firefighters, as noted in the the Firefighter Fatality Retrospective Study page 18 (TriData Corporation, 2002). This reinforced the concern of the need to pass on knowledge from the experienced.

Fire incidents in OCFRD have declined over the 10 years, Appendix G. Data was reduced to reported fires that also reported to have entered the action of extinguishment in the program. The data was also grouped by the three major fire types within Orange County.

Table 3

OCFRD Annual Fire Record

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Structure Fire	202	296	263	260	310	280	274	247	250	253	48
Vehicle Fire	350	578	537	535	527	475	512	506	424	338	60
Brush Fire	248	281	245	190	285	205	440	283	258	305	68
Total	800	1155	1045	985	1122	960	1226	1036	932	896	176

NOTE: *OCFRD Annual Fire Record is data retrieved pertaining to number of fire incidents. Data was used by author to confirm the decreasing number of fire incidents with OCFRD.*

As noted in the literature review, per USFA report, although the firefighter deaths have been declining, the ratio of deaths per hundred thousand calls has been increasing. Thus in simple terminology, the trend is less fire incidents per firefighter death.

The different reports, Post Incidents Action (PIA), Near-Miss Reports, and Safety Bulletins, all are placed on OCFRD's intranet site. This allows for all personnel while on duty ability to access. The reports are listed in a variety of methods. Some reports are listed by incident number, some by incident location and some by date of occurrence.

One hundred twenty seven OCFRD certified firefighters responded to the questionnaire. Most of the responding personnel were over 15 years of tenure, 71 of the 127. Nearly 71% do not know of any methods in which OCFRD retains institutional knowledge. Of the 127, 111 personnel believe that it would be useful information to retain.

From other fire departments there was a total of thirty seven responses from the questionnaire. A majority response received were from senior firefighters, 46% were with over twenty years experience and 84% had over 15 years experience. Of the total number of responses over 62% did not know of any form of retention of institutional knowledge performed by their individual departments. The idea of retention of knowledge was considered useful in over 91% of all responders.

Some remarks, from both OCFRD and other fire department personnel, can be viewed in Appendix F and Appendix G respectively. From the questionnaire, OCFRD and other fire department responses are very similar. One difference noted was the response to question 2, "At how many years do you feel a firefighter is "seasoned" or "experienced"?" Personnel from within OCFRD had just over 42% agree 10 years or more is considered experienced. Other

department personnel responded with over 50% to be between 5 and 7 years to become experienced.

Discussion

Orange County Fire Rescue is getting younger and the average experience level has dropped. The loss is not over. In the next three years, there will be a loss of 40 and a potential loss of 127 more. Currently the average experience level of a firefighter is 7.3 years. If the department had a mass exodus today of everyone eligible to retire, the average would drop to 6.5 years (see Appendix D).

National data indicates that firefighters less than 35 years of age tend to have more traumatic deaths on fire grounds than their older counter parts. Injury trends within OCFRD indicate that the employees with 10 or less years of service tend to get injured more on emergency incidents. The rank of firefighter composes 60% of all Line of Duty Deaths (LODDs).

Although no one can keep someone else's experience, one can retain some of the knowledge possessed by that person. The key is to retain that knowledge. How do you do that?

Through this research, it was evident that most fire departments claim to not having any formal method of retention of institutional knowledge. Yet all can acknowledge of a time that an informal process was very strong. That informal process has been called many different things such as, "table talk", "kitchen table talk", "war stories" and so forth. This informal process has helped form and continues to molds the fire service into what it is now.

"Table talk" is not completely gone. It can still be found in many stations, but now it is just a select few of the crew participating. Is the "fire" that once existed in the experienced

firefighter wanting to share his experience being extinguished? On the other hand, is it the desire to listen to "war stories" being overcome by the desire of multimedia?

The generational gaps between the senior firefighters and the new firefighters are obvious by some comments noted in the questionnaire. In addition, as noted in the literature review, the generational differences are a reality. This area is very shocking to note that the "brotherhood" is quick to accuse the other for this problem. Instead this should be a problem that each need to accept some responsibility. Much like parents raise their children, we as experienced firefighters should protect and prepare the "rookies" for the future.

As the emphasis was on how to formalize a process to facilitate transfer of institutional knowledge of the retiring employees, different methods have been found. Mentoring was a leading process performed by the private and governmental agencies. Mentoring would require a set period for an inexperienced employee to work closely with an experienced employee.

Orange County Fire Rescue does have a formal mentoring process. This process is strictly designed for the Emergency Medical portion of the department. The new paramedics are scheduled with an experienced paramedic. The period for this program is short, usually 1 month. In this time, the new paramedic is prepared to be a "stand alone medic".

Another example of mentoring the new firefighter is after finishing his orientation time and placed out into the field. The firefighter is assigned as fourth personnel on different units in the county to get an understanding of each unit and its capabilities. Then the firefighter is assigned to a station to remain there for six months. During their first year, the probationary firefighter is assigned a training packet to be completed.

The opportunity to mentor as a form of transferring knowledge is great. The firefighter could definitely gain knowledge that may make a difference in their career and life. The only

problem with this is that again you have stored the knowledge in another vessel that can leave. Thus, mentoring will only further delay the loss of institutional knowledge.

Yet mentoring is a very good program; and should never be eliminated as a process. The problem with mentoring is the requirement of a two-way road. Both the experienced employee must be willing to share his experiences and the inexperienced employee must be open-minded enough to learn.

Another concern is that the formal process of mentoring is too linear. It is usually a one on one. Formal mentoring can only help one person at a time and during that time frame. Yet the informal mentoring can continue even when the two individuals are no longer together. For example, a company officer can be a mentor for a firefighter even after the firefighter has himself achieved the ranks of company officer.

The State of Florida Retirement system offers a Deferred Retirement Option Plan (DROP). The DROP plan allows the employee to retire and yet continue working. For example, if a senior employee reached retirement, the employee could officially retire. Then the employee would enter into a contract agreement, retirement amount would be placed in a reserve account and stored, and the employee would continue his current employment. This contract would be for the duration of five years. After five years, the employee must take the retirement.

Orange County Fire Rescue employee's retirement plan is in the State of Florida system. Therefore, if the firefighter wanted to stay longer, he could select to do so. This would help maintain experience within the department. This is another wonderful program, which can potentially help with the retention of knowledge. Again, this is only delaying the inevitable; the loss will still be walking out the door.

The Training department is working diligently to curve that loss. For the last couple of years and moving forward, training has been recording both audio/visually and documenting all training events. As the current Division Chief of Training, Mark Rhame likes to say, we are "memorializing" the training. Therefore, the Training department is using everything that is at their disposal to retain this knowledge.

Standard Operating Procedures evolve over the years. These changes in the SOPs are a result of lesson learned over the years. From unsuccessful incidents to the positive outcome to the new technological advances have all played a part in the development or the changing of SOPs.

At the beginning of this research, the author was among the majority personnel in OCFRD with the belief that no method of retaining knowledge existed. The author must admit that OCFRD has been working hard to retain knowledge. It is unfortunate that the majority of the personnel do not know about it. Some knowledge is retained. "Table talk" is not completely dead. There are reports such as the Safety Reviews, Near Miss Reports, Post Incident Analysis (PIA) reports, Training records, and even SOPs.

This data is stored for access at any time by the personnel. These reports, documents, and videos are copied and maintained on the department's intranet. Thus again contrary to popular belief, the access to them is simple. Unfortunately, there is no cataloging of these reports. For example, if a company officer wanted to search for any or all reports pertaining to attic fire incidents, the company officer would have to manually search each report to find which fit his training.

Another limitation found is some of the reports have to meet certain criteria prior coming into existence. For example, the roof collapse of a residential structure might only become a

PIA, if the value of the loss is over $200,000. The author did not realize that the value of a home

is more important than documenting any possible peculiarities of the event. Another example is

of war stories that have been told of are homes with built up roofs, the author has not seen any

reports on these. If there are, there is no way to readily access the report to begin the knowledge

transfer to others.

Reports from other fire departments, such as Phoenix and Orlando Fire Departments, are

not simple written documents. These reports contain interviews, drawing and video of the event.

The interviews have point of views of the personnel involved in the incidents. They express

what they saw, what they were thinking and why they performed the actions that they did.

Between the interviews, videos, drawing and pictures there is a profound understanding of the

event and the lessons learned. This information is "Priceless". Yet those departments, as well,

do not have the information cataloged.

Deputy District Chief Chikerotis' presentation "Learning From Our Mistakes" hit the nail

on the head. A specific quoted noted from the presentation say it all, "Bury mistakes and you

will bury firefighters."(Chikerotis, 2010) Chief Chikerotis discusses incidents within his

department and the methods they have taken to improve upon them. He continues by advising

that after a death of a firefighter, CFD conducted an internal investigation and created a booklet

of events that lead to the loss. Chief Chikerotis continued by stating that it is important to learn

from the mistakes and not to wait for an Occupational Safety and Health Administration (OSHA)

report.

One example of a recent incident in Chicago was of a firefighter death. The firefighter

had 2 months of experience. Chief Chikerotis advised that it was a 900 square foot home, which

was well involved in fire. He continues by saying big fire means big water, but this was a small

house thus the appearance of size was distorted. The firefighter used a 2 ½" attack line, which created problems with movement. Another error was the conditions of the structure; the event was a flashover. Chief Chikerotis advised that these were inexperienced errors. Chief Chikerotis' presentation is right on point; we need to "Learn From Our Mistakes" or we will "…bury our firefighters."

Recommendation

Through the analysis of the data, it is evident that OCFRD is going through a retirement phase that will take result in a young and less experienced fire service in Orange County. The only firefighter deaths experienced in Orange County was partially due to lack of experience, per the investigating officer. As history tends to repeat itself, OCFRD may be faced with more LODDs or injuries. Prevention of a repeat event is the leading cause of this research.

From the results of this research paper, the first and most important step to take will be to reengage the older experienced personnel with the younger inexperienced personnel. The "war stories" need to resurface. This can be accomplished by creating a discussion point for each crew, much like FDNY.

Due to the complications of setting up a mentoring program for the firefighters, the above noted discussion points may resolve that issue. This will open the opportunity for firefighters to find mentors in an informal method. As noted throughout the ARP, most of the mentoring that was encountered was in an unofficially and informally created. Another result from engaging both the older and newer firefighters would be this mentorship.

This step will need to be monitored for progress. It is the belief of the author that it may bridge the gap and resolve the problems of the generational gap. Additionally to the monitoring,

further research is needed on workforce diversity and bridging the gap to create a harmonious

working environment for present and future.

Another undertaking would be to consolidate all of the current retained documents and

files. During the process of consolidating, there needs to be a system of cataloging the material.

The materials need to be cataloged by type of incidents, injury incidents, location…

Upon completion of cataloging, there needs to be a process of accessing the material in a

user-friendly method. The intranet within the department is already in use and employees have

some knowledge of accessing. The use of the intranet could serve as the access point to the

program put in place for retaining knowledge. This program needs to be on the primary page, as

the program should be stressed for use and growth.

Once the system has been set up, it would then be time to expand upon it. At the current

point, only reports that meet certain criteria are recorded. It would now be prudent to begin to

capture any and all significant emergency events. Events could be from odd events that were

encountered to simple mistakes done and how they were overcame. A perfect example would be

the recent auto accident that was handled by the crews perfectly, and then because of another

citizen's lack of control of their vehicle hit a firefighter on the initial scene and severely injuring

him. This would lend itself to help show the other firefighters, always be aware of their

surroundings; things can change in fractions of seconds. The key to recording events is simply

answering the question, "Can anyone else learn from this?"

Further development of the program would be the creation of an interactive mapping

system. The department already has access to the Geographic Information System (GIS) system

within the county government. Mapping the incidents would allow the cataloging to include the

incidents being mapped out. Then any personnel could look at incidents within their first

response area or in other areas of interest.

"Lessons learned" need to be larger than just the person involved and the administration

that complied the report. As shown in reports from Phoenix and Orlando fire departments,

thought processes and decision-making processes are shown. These processes can be used as

learning points, discussions of differences of SOPs, and methods to improve upon should a

similar event were to occur today.

These reports must also appeal to all of the generations of firefighters. The reports would

need to incite the older firefighters to recall similar past events and the decisions made to deal

with that situation. It would also have to excite the newer firefighter's creative/curiosity. The

use of multimedia would play a significant part in creating this environment.

Orange County Fire Rescue Training Division is currently working on a command

simulator program. The process includes creating different simulators to help develop the future

incident commanders. A portion of this development should consider real events.

An example would be after a fire, information would be retrieved from personnel on

scene. The information recorded in a multimedia format, i.e. video, audio, photographs and

drawings of structure layout with fire line placements. The simulator created to be as close as

possible to actual event, with same initial findings to the same results. After personnel proceed

through the simulator, they could compare their decisions with those of the actual event. This

would potentially create a pseudo-experience environment.

If any "Lesson Learned" prevents another fellow firefighter from injury or fatality than it

was truly a lesson learned. It must be passed on forever. Again a quote from Chief Dunn,

"There are no new causes of firefighters' death and injury; firefighters are killed and injured

performing the same tasks each year." (Dunn, 1992)

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Appendix A

Chief,

I am a Captain with Orange County Fire Rescue in Florida. I am currently working on an Executive Fire Officer Research paper. In this research paper, I am seeking different methods of retaining Institutional Knowledge within my department. Orange County Fire Rescue is going through a retirement phase. My concern is that the retirement personnel are taking a vast amount of experience with them. This wealth of experience is taking most of the knowledge attained over the years. This knowledge can make a huge difference in Orange County Fire Rescue's future.

Therefore, I would like to request your help. I would like to know what your department has in place for the retention of Institutional Knowledge/Institutional Memory, both from retirees and exiting employees. As much detail as you can provide about the method to include the pros and cons found with your method.

As a clarification, below are definitions found in Wikipedia that hopefully will help clarify.

"Institutional knowledge is gained by organizations translating historical data into useful knowledge and wisdom. Memory depends upon the preservation of data and also the analytical skills necessary for its effective use within the organization."

"Institutional memory is a collective set of facts <http://en.wikipedia.org/wiki/Fact>, concepts <http://en.wikipedia.org/wiki/Concept>, experiences <http://en.wikipedia.org/wiki/Experience> and know-how <http://en.wikipedia.org/wiki/Know-how> held by a group of people. As it transcends the individual, it requires the ongoing transmission of these memories between members of this group."

As you may know, there is a deadline for the paper, thus it would be appreciated to receive the information back within 3 weeks. Any assistance is greatly appreciated.

Thank you,
Richard Saez # 0909
Captain, Training
Orange County Fire Rescue
o - 407-254-9018
c - 321-436-6682

Appendix B

Fire Chief Contact List

Department	Fire Chief	Email	Phone Number	Replies
Seminole County Fire Rescue	Chief L. Mims	lmims@seminolecountyfl.gov	████	X
Osceola County Fire Rescue		rcol7@osceola.org		
Brevard County Fire Rescue	Chief L. Collins	larry.collins@brevardcounty.us		
Hillsborough County Fire Rescue	Chief W. Nesmith	nesmithw@hillsboroughcounty.org	████	
Lake County Fire Rescue	Chief J. Jolliff	jjolliff@lakecountyfl.gov	████	
Broward Sheriffs Office Department of Fire Rescue	Chief J. Lello	joseph_lello@sheriff.org	████	
Miami Dade County Fire Rescue	Chief H. Lorenzo	hlorenz@miamidade.gov		X
Orlando Fire Department	Chief J. Miller	laura.pittman@cityoforlando.net		X
Winter Park Fire Rescue Department	Chief J. White	jwhite@cityofwinterpark.org		X
Longwood Fire Rescue Department	Chief P. Stravino	astravino@longwoodfl.org		
Sanford Fire Department	Chief G. Ransom	ransomg@sanfordfl.gov		X
Kissimmee Fire Department	Chief R. King	rking@kissimmee.org		
St. Cloud Fire Rescue Department	Chief C. Lewis			X
Tampa Fire Rescue Department				
Cocoa Fire Department	Chief F. Murphy	firechief@cocoafl.org		X
Eustis Fire Department	Chief R. Winn	winnr@ci.eustis.fl.us		
Clermont Fire Department	Chief C. Bishop	cbishop@clermontfl.org		
Mt. Dora Fire Department	Chief R. Snowberger	snowbergerr@ci.mount-dora.fl.us	████	
Casselberry Fire Department	Chief D. Harkins	dharkins@casselberry.org		
Melbourne Fire Department	Chief P.Forsberg	pforsberg@melbourneflorida.org	████	

List of 18 departments in Florida attempted to be contacted for research data. Replies received from marked departments**.**

Appendix C

Job Title	Number of Personnel	# < 25 yrs on	# < 15 yrs on	# < 10 yrs on	# < 5 yrs on	Average Years of Service
Division Chief	2	1	0	0	0	25.1
Assistant Chief	6	5	0	0	0	22.2
Battalion Chief	28	19	3	0	0	22.6
Captain	16	13	4	0	0	20.8
Lieutenant	156	124	60	20	0	18.5
Engineer	151	130	92	62	6	14.7
Firefighter	602	580	527	483	300	7.3
Total	961	872	686	565	306	11.1

Job Title	Number of Personnel	Average Years of Service	Retirement Capable Count	Average if Capable left	Capable Retire 3 yrs (additional)	Average if 3 yr left
Division Chief	2	25.1	1	21.1	0	24.1
Assistant Chief	6	22.2	1	20.9	2	23.1
Battalion Chief	28	22.6	9	19.5	6	20.8
Captain	16	20.8	3	19.2	5	19.4
Lieutenant	156	18.5	32	15.9	25	17.1
Engineer	151	14.7	21	12.5	17	13.9
Firefighter	602	7.3	22	6.5	23	7.3
Total	961	11.1	89	9.3	78	9.4

Tables show longevity with Orange County Fire Rescue and current ranks. Bottom Table makes assumptions of retirement.

Appendix D

Employee Rank	Date of Hire	Years of Exp as of 1/1/09	Date of entered DROP	Date DROP ends	Years of Exp at Time of Drop	Number Complete by End of Year
Engineer	6/30/78	30.5	7/1/05	06/30/10	32.0	
Lieutenant	7/21/80	28.5	8/1/05	07/31/10	30.0	
Engineer	10/6/80	28.3	10/1/05	09/30/10	30.0	
Engineer	9/22/80	28.3	11/1/05	10/31/10	30.1	
Lieutenant	10/6/75	33.3	11/1/05	10/31/10	35.1	
Lieutenant	12/11/80	28.1	12/1/05	11/30/10	30.0	
Engineer	3/2/77	31.9	12/1/05	11/30/10	33.8	
Firefighter	10/31/80	28.2	1/1/06	12/31/10	30.2	
Engineer	5/14/79	29.7	1/1/06	12/31/10	31.7	9
Firefighter	8/18/86	22.4	8/1/06	01/31/11	24.5	
Lieutenant	1/26/81	28.0	7/1/06	04/30/11	30.3	
Captain	10/15/80	28.2	7/1/06	06/30/11	30.7	
Lieutenant	4/12/76	32.7	7/1/06	06/30/11	35.2	
Lieutenant	1/26/81	28.0	7/1/06	06/30/11	30.4	
Firefighter	2/2/81	27.9	7/1/06	06/30/11	30.4	
Lieutenant	6/6/77	31.6	7/1/06	06/30/11	34.1	
Firefighter	9/19/81	27.3	7/1/06	06/30/11	29.8	
Batt. Chief	9/8/75	33.3	7/1/06	06/18/11	35.8	
Lieutenant	5/4/79	29.7	7/1/06	06/30/11	32.2	
Engineer	6/1/81	27.6	7/1/06	06/30/11	30.1	
Div. Chief	8/17/81	27.4	9/1/06	08/30/11	30.1	
Lieutenant	10/1/80	28.3	11/1/06	10/31/11	31.1	
Captain	10/26/81	27.2	11/1/06	10/31/11	30.0	
Firefighter	10/26/81	27.2	6/1/07	11/30/11	30.1	15
Lieutenant	7/12/82	26.5	4/1/07	03/31/12	29.7	
Engineer	4/5/82	26.8	6/1/07	03/31/12	30.0	
Lieutenant	11/17/81	27.1	5/1/07	04/30/12	30.5	
Lieutenant	4/5/82	26.8	6/1/07	05/31/12	30.2	
Firefighter	4/5/82	26.8	6/1/07	05/31/12	30.2	
Engineer	4/5/82	26.8	7/1/07	06/30/12	30.3	
Firefighter	2/16/81	27.9	7/1/07	06/30/12	31.4	
Lieutenant	7/12/82	26.5	7/1/07	06/30/12	30.0	
Engineer	4/23/90	18.7	9/1/07	08/31/12	22.4	
Lieutenant	5/8/79	29.7	9/1/07	08/31/12	33.3	
Batt. Chief	7/12/82	26.5	11/1/07	10/31/12	30.3	11

Firefighters	9
Engineers	11
Lieutenants	15
Captains	2
Batt. Chief	2
Div. Chief	1
	40

Firefighter	9/22/80	28.3	2/1/08	01/31/13	32.4	
Firefighter	6/13/88	20.6	4/1/08	02/28/13	24.7	
Lieutenant	2/22/83	25.9	7/1/08	06/30/13	30.4	
Engineer	6/18/79	29.6	7/1/08	06/30/13	34.1	
Engineer	10/1/78	30.3	10/1/08	09/30/13	35.0	5
Total / Average		40	27.9			30.8

Appendix E

Transfer of Knowledge

1. Transfer of Knowledge

Hello. My name is Richard Saez. I am a Captain with Orange County Fire Rescue in Florida.

I am conducting a research project on the retention of institutional knowledge. The focus of the knowledge looking to be retained is at the firefighter/tactical level. Your help in this questionaire is greatly appreciated.

* 1. What is your tenure (years) in the fire service?

[   ]

* 2. At how many years do you feel a firefighter is "seasoned" or "experienced"?

[   ]

* 3. Do you know if OCFRD has any method of keeping institutional knowledge?

◯ Yes

◯ No

4. If OCFRD does retain institutional knowledge, please list the different methods.

[   ]

5. If OCFRD does have methods of retaining knowledge, rate it's accessibility.

◯ Very Easy

◯ Easy

◯ Moderate

◯ Difficult

* 6. Do you feel this retained/recorded knowledge is useful?

◯ Yes

◯ No

7. When a veteran firefighter retires, how important do you feel is their loss of experience?

◯ No significant loss

◯ Some loss but easily replaced

◯ Difficult to replace

◯ Significant loss

Other (please specify)

[   ]

Transfer of Knowledge

8. If you would like to comment or add information please do so.

Appendix F

Response from Internal Questionnaire

1.

Transfer of Knowledge

What is your tenure (years) in the fire service?		
Answer Options	**Response Percent**	**Response Count**
0 - 5	11.8%	15
6 - 10	17.3%	22
11 - 15	15.0%	19
16 - 20	7.9%	10
20 +	48.0%	61
	answered question	**127**
	skipped question	**0**

2.

At how many years do you feel a firefighter is "seasoned" or "experienced"?		
Answer Options	**Response Percent**	**Response Count**
1	0.0%	0
2	3.1%	4
3	5.5%	7
4	3.9%	5
5	19.7%	25
6	10.2%	13
7	7.9%	10
8	5.5%	7
9	0.0%	0
10	36.2%	46
11	0.8%	1
12	0.8%	1
13	0.8%	1
14	0.0%	0
15	5.5%	7
16	0.0%	0
17	0.0%	0
18	0.0%	0
19	0.0%	0
20	0.0%	0
20+	0.0%	0
	answered question	**127**

	skipped question	0

3.

Do you know if OCFRD has any method of keeping institutional knowledge?		
Answer Options	Response Percent	Response Count
Yes	29.1%	37
No	70.9%	90
	answered question	127
	skipped question	0

4.

If OCFRD does retain institutional knowledge, please list the different methods.	
Answer Options	Response Count
	48
answered question	48
skipped question	79

Number	Response Text
1	Readdressing learning objectives every couple of years on task that are both frequent/high risk and infrequent/low-high risk.
2	Through training programs and incident scenes saved on the training drive.
3	The question states do I know if...I know and the answer is that OCFRD does not have any effective method, formal or informal.
4	EOPs / SOPs. TERMS learning system. LMS in the near future. Archived training records.
5	Multi review training, Officer schools, Command schools, In-station training
6	Quick drills / station drills / probationary skills manual
7	I don't know. Does it?
8	Video
9	Succession planning with subordinates
10	Training Manuals, SOP's, EOP's, Informal passing of information from member to member
11	SOP, EOG
12	sops and eogs, station maps
13	Through videos filmed of or by the people that left and by sharing through training what we know down to the new people.
14	Active Fire Service Library, Continuing Education with both hands on training and Academic Knowledge
15	No real method videos and training on line not accessible after awhile

16	The system is built in. Institutional knowledge is past on from those around you. Most new people have no repect for seniority or have any sense of tradition. The problem is not the loss of knowledge but lack of people interested in obtaining or wanting it.
17	In station, one to one interaction with experienced personnel. Stories have been used from the dawn of time to pass on knowledge. SOPs are a method that passes on certain types of institutional knowledge.
18	Continuing Education and Required Training and Certifications; Top of the line training facility and training department who are willing to assist any operation level employee in any suggested area of expertise; SOP's available to every operation level employees no matter the length of service;
19	Training programs and mentoring training. We do not do much mentoring.
20	Back to basic training.
21	Seasoned employees in training who are willing to pass on their knowledge for new hires and during continueing education..
22	word of mouth
23	Review know if OCFRD has this so #5 & #6 is N/a
24	videos of past training sessions
25	OCFRD must continue to educate its officers in tactics and techniques of firefighting and command even if outside personel are used, to combat the rapid and steady loss of our internal knowledge base.
26	it does not have one
27	back to basics program has been very useful in reinforcing ability and confidence
28	unk
29	OFM's files, OEM's files
30	Administratively from 2000 to present OCFRD retains a large amount of statistical data reports covering topics such as hiring of personnel, grievances, discipline, arbitrations, alarm responses, transports, vehicle off load times, annexations, hydrants, agreements with surrounding departments, templates of documents, just to name a few. Also the department utilizes retired personnel in contractual positions such as hose testing, hydrants, statistical data, compliance, instructor training, reserve and explorer posts which provides significant institutional knowledge.
31	Training data base. Computer based training and out side review were all developed by firefighters who felt this knowledge needed to be passed on. This is as a result of there personnel experiences.
32	Through SOPs
33	multi company drills, ems recert,
34	shadowing of the position, dinner conversations, back to basics training, rememberance of Mark and Todd
35	Online training
36	Annual training, Multi-company training, Computer driven training,

	Veteran Firefighters passing knowledge to probies thru their packets.
37	Computer based programs and there are annual training courses at our training center
38	Terms program and EMS training on Key EMS ED
39	Through Terrms, mag. Story's and passed down story"s about events you have been in.
40	OCFRD does not and never has had a method for retaining institutional knowledge. In fact, in my opinion, management could care less about losing or retaining institutional knowledge. Getting the "old guys" out and the newer, lower paid people in is all they care about. Also, they have no succession planning/mentoring plan. When someone up top leaves, they have to bring back retired people to fill these spots because "we don't have anyone qualified that can fill these spots."
41	Training, direct contact with experienced personnel,
42	E-mail...Web Sites...Recomended Books,...Significant review Calls in the Department. Word of mouth.
43	Word of mouth.
44	probation 1yr 1year before you drive rescue or wood truck 2 years before you drive engine 6 years for Lieutenant test with College and Officer 1 Cerification
45	computer/training
46	SOP, Union Contracts, Intranet, LMS
47	N/A
48	Training web site.

5.

If OCFRD does have methods of retaining knowledge, rate it's accessibility.

Answer Options	Response Percent	Response Count
Very Easy	6.1%	5
Easy	24.4%	20
Moderate	31.7%	26
Difficult	37.8%	31
answered question		**82**
skipped question		**45**

6.

Do you feel this retained/recorded knowledge is useful?

Answer Options	Response Percent	Response Count
Yes	87.4%	111
No	12.6%	16

answered question		**127**
skipped question		**0**

7.

When a veteran firefighter retires, how important do you feel is their loss of experience?

Answer Options	Response Percent	Response Count
No significant loss	0.0%	0
Some loss but easily replaced	12.2%	15
Difficult to replace	42.3%	52
Significant loss	45.5%	56
Other (please specify)		20
answered question		**123**
skipped question		**4**

Number	Response Date	Other (please specify)
1	In many cases it is irreplaceable.	
2	It would depend on that person's experience level (EMS level, number of calls, busy vs slow stations) and also how well they were able to convey their knowledge	
3	It is relatively easy to replace front line functions in field services. The department struggles to replace losses in support functions.	
4	Very difficult to repkace!	
5	knowledge of buildings, situational tactics	
6	Some firefighters at retirement may have had 25 one year experiences.	
7	Depends on the individual. Some people you can't wait till they retire.	
8	The loss is felt by poor outcomes that will decrease as experience increases.	
9	I think we all want to go through our career pushing to be the best and when it is time to leave we may think we take knowledge with us that needs to be passed on. I think part of it is our ego but I do believe some do take knowledge that will never be passed on, that is just to bad.	
10	Returning Fire Fighters who are hired to perform specific training events could be an excellent method of retaining this knowledge.	
11	It depends on the firefighter. From my experience, there are firefighters with great experience, others that haven't cared.	
12	Depends on thier skills. You can have a thirty year guy w one year experiences in the thirty years	
13	Extremely difficult because the next generation lacks pride, determination and COMMON SCENCE	
14	knowledge of life	

15	Depends on who it is and what their career entailed but if they were a highly skilled, knowlegable, and well rounded firefighter then yes it is a significant loss to the department.
16	The Fire Service Profession doses not souly relie on a single person experience. It is a collective effort of skills and knowledge that enables us to get the tasks done safely. If a department becomes dependant on one person's experience, this needs to be recognized and corrected.
17	New Chiefs being promoted have no experience.
18	It is difficult to replace the knowledge lost thru the years. However The FD will continue to grow and if the retires were good at what they did we will continue to use what they taught us and build on that knowledge.
19	It really depends on the individual. I would put my answer at about half way but your selections indicate extreme of yes and no.
20	depends on the average tenure of the remaining employees

8.

If you would like to comment or add information please do so.	
Answer Options	**Response Count**
	53
answered question	**53**
skipped question	**74**

Number	Response Text
1	Training cannot not replace expierience.
2	Retention of taught/learned objectives is subjective. The more you use a skill, the better your retention of that skill exist. If you don't use it, you'll loose it. Maybe a schedule of rotating crews from slow houses to busy ones once a quarter / twice a year?
3	I am unaware of Ocfrd recording knowledge of retiring personnel I think that coupled with our lack of training and the drop in fire calls could lead to a serious problem in the future.
4	OCFRD demonstrates a complete lack of succession planning. I see no attempt to learn from experience or attempts to prevent repeating past mistakes. There is a greater concern for demographics than qualifications (like experience).
5	Number of years to "experienced" for a firefighter depends on the station, the company officers involved, and the individual. I think a big part of experience is actually running calls. A young guy with a lot of calls has a lot more expierience and knowlegde to fall back on. I also feel that older guys do not give the younger guys enough credit sometimes. They are very bright and catch on fast. If we teach them sound fundamental concepts then their default

judgements will be sound when they are confronted with an unknown or first time experience.

Experience is important. But so is knowledge and education. Experience doing something wrong (well this is how we used to do it) is not worth anything, and if anything it is a hindrance. For example. How many times in the past have firefighters run into fires without SCBA's, tasted "hazardous materials" to find out what they are (I've seen this happen twice in my career), etc.

Fire Officer 1 state certification now requires a lot more then it did, 10, 15, 20 years ago. And how often does OCFRD have mandatory training for Lieutenants/Ride-up Engineers that deals with managing people? It doesn't. How often do you listen to active fires on the radio? When comparing newer employees versus "seasoned" veterans, do you know who misses more bench marks? The seasoned ones. Granted, bench marks don't put out fires. But they certainly help with organizing and controlling your scene. And anyone who has had command of any significant incident knows its very stressful and can be very dangerous if you lose track of the scene and bench marks. How can you know what to do, if you don't know what you did?

The fire service is evolving. We need new blood in the department. You can never grow as a department if your management never changes. For example. The new tattoo rule. The person, Hepker, who spear headed that is from a different generation. This is 2010. Tattoos are socially accepted by most people. When someone is in need of help, and you have a firefighter/PM/EMT/cop, etc, have you ever heard of them asking for someone else to help them when a tattoo responder shows up? No.

If you had management from this generation I can guarantee you we wouldn't have near as many problems as we do.

I hope you share this post with your co-workers at training. This should promote some good "water-cooler" talk.

Good luck on your project.

Check out: http://firehouse52.proboards.com

Sincerely,

6 OptimusPrimeNumber
They could always come back in a consultant role. They could also bring someone they can mentor during their last several years. That

7 way, at least some of that knowledge would get passed down.

8

Losses due to retirement are a relatively new phenomenon for OCFRD, but it is normal process for most organizations. OCFRD can improve the rentention of organizational knowledge by creating a more formal mentoring program and requiring employees to work in a variety of functions thoughout their careers. OCFRD often allows informational silos to form by only assigning one or two people to specialized projects or processes. When that person leaves, the Department has difficulty replacing the person or continuing the task. One example would be the research and analytical functions performed by Eric Yeadon. He is currently the only person in the Department able to do those functions, and no serious effort is being made to train others in those functions..

9

Rich, most newer FF'ers don't want experience and knowlegde to be passed down...they KNOW it all. The Orange County culture is, one dosen't need experience when our training and SOP's/EOG's say it all!!   A few months ago, a newer FF'er told me the older guys don't want to share their experiences. So, I asked him how he approach this person...one of an eager FF'er willing to open his eyes, ears and mind and close his mouth or one of a young college degreed individual, that has never really performed any real labor or blue collar type job, looking down on this senior FF who has a high school diploma, and has paid his dues, done his time and learned from the school of hard knocks? This newer FF'er never answered my question and I never solicited it. Most newer FF'er think they know it all and challenge everything an older FF'er says and does. I guarantee our next LOD will be that of a newer FF'er due to over confidence or aragance. I call them 2/20's...one that has 2 years on, but thinks they have 20. When I started the Fire Service in 83, I knew a few of the guys at my station weren't the brightest, but I fugured if they had enough horse sense to survive this danderous job, I could learn from them and possibly save my own life. Secondly, these "not the brightest" FF'ers had been serving their communities for years and risking their lives....I paid them the respect they deserved. Best of luck with ypur project.

10

New age, new firefighters, different chemicals, materials, methods, etc. It's a good thing. New firefighters have new knowledge combined with the newer fitness standards. We are the future and can retain and execute plan of action with good results.

This fire department has evolved in its training from a technical standpoint which in turn seems to diminish the value of retained knowledge (experience) in the eyes of younger firefighters. When I began in the fire service the lieutenant was tasked and expected to train his people. Today with the added duties and tasks placed on fire companies and the implementation of computer based training being heavily stressed, it would seem that hands on company level training is obsolete. As well, with the mean age of our company level leadership being so young there seems to be a lack of overall field experience to be passed down. My personal fear is that as the mean age of our department continues to go down there will be an
11 increase in firefighter injury.

I think that the only true method is one on one. If you were to use media, I do not believe that the majority of the personnel would use it. Plus most "old guys" have forgotten more than the new guys know. The only other way is to have a slow steady resupply of
12 personnel and have them stay with the experienced guys.

Good luck. People that retirement take a lot with them but hopefully they shared their knowledge with others so that they can carry on
13 this valuable information.

Creating a Better training system that allows a Student to confront a given Senerio and train them accordingly,This should confront both
14 EMS and Fire,with a Strong approach towards EMS.

In reference to question 2 there are too many varibles to set a number that would reflect "seasoned" what area is the person assigned what is the call load of the station and so on. With question number 4 there is no method that I know of so question numbers 5 and 6 would not apply. Questions number 2 and 6 was given an
15 answer because the system requires one.

This department does not care if retired personnel leave and not share thier experiences. The problem lies with departments who are faced with filling many vacancies at a time with most of the new wave of FF's who know it all or just don't care. As a vertern, I am very frustrated with this lack of work ethic along with the seriousness of this job. In the "good old days," training, commardery, and a true sense of brotherhood was as important as doing the job. Today, we no longer have the leadership qualities from the past, as this deparment is promoting personnel who become managers who watch over there children until shift change and really never learn the true meaning of becoming a great fireman. The lazy attitude of this generation of FF's is unacceptable and will lead
16 to more injuries or worst yet, LODD.

At how many years do you feel a firefighter is "seasoned" or "experienced. this all depends on what station the person is stationed at. If we keep putting rookies at slow stations it takes longer for them to gain experance. The station that run a higher call volume, you can gain expirance quicker.

Also depends on the crew that you are with. If the entier crew has 6 or less years experiance. the entire crew is gaini8ng experance. If there is at least one person on the crew with 15= years they can be a

17 mentor and a asset to the entire crew, by passing on there knowlage. OCFR Has a huge wealth of knowledge of over 1000 firefighters but some of the traing that is done here is almost pointless. Given the amount of firefighters with a high level of training and i feel that we

18 can be more advanced in our training.

Fire Department administration does not value veteran's experience. They care more about finding a way to force them into retirement through intimidation and hostile work environments to save money

19 by replacing them with a new person.

I am consistently learning new things every year and through

20 advances in technology how could one ever feel truly seasoned.

Institutional knowledge is all around you. Some is excellent some is flat out stupid. None the less you still learn from it. I dont think its something you can bottle. You just have to ask, pick some brains

21 and keep your mind open and your mouth shut.

A firefighter's level of expertise is contingent upon that particular firefighter's drive and desire to be a good and professional firefighter. There are several tenured firemen with no more value

22 than a junior level firefighter.

It would take to long to say because I am un-replaceable. Well very

23 replaceable.

We are trying to create an environment where FF's Engineers and Lt's are deemed adequate and competent by how well they follow bench marks. We need people that have common sense and are able to make sound decisions when faced with the many different

24 situations that occur.

Experience is time and event you can only recieve it as you do it. Yesterday is history, tomorrow is a mistory, today is a gift, that is

25 why they call it the present.

some of the retired troups should be kept for training the newer

26 troups

As a soon to be retired veteran, I can remember how important the " Old Guys " were to my growth in the fire service. This is not the case with this department currently, given the time in grade of our officers. Although through no fault of their own, the current officers

27 just lack time on the line fighting fires and saving lives.

28 To my knowledge there is no retained knowledge. For many years knowledge was passed down to the next generation orally by war stories told around the kitchen table or in the bay over training. Orange County administration has done its younger members a horrible disservice by taking these training sessions and putting them on computer. This tactic has driven a generational wedge within the department. On one side of the wedge you have the "older" group of seasoned fire department members (some of whom don't like computers) whose experience comes from hands on experience on the training grounds. On the other side you have the "younger" group who have grown up in front of a computer screen and don't realize the value of hands on experience. This problem of not being able to retain knowledge probably won't be solved by putting out another computer based training session. Rather it can only be solved by the senior respected members doing another back to basics style training in the field.

29 I believe OCFRD does not do a good job tapping the expierenced FF before they leave. If wish there was some type of de-briefment held by peers or younger FF's to capture the knowlege a senior person has before they relieve. Perhaps several months before the senior man leaves a team could spend time attaining his or her knowledge.

30 We do not encourage veterans to spend some part of their time as adjunct instructors working with crews, especially less experienced officers.

31 We always have to remember that being a seasoned veteran has its vices. Some do not want to share the knowledge they have so that they seem smarter than those who are inexperienced. We can only attain knowledge and experience through books, calls and information passed down from our veterans. Our veterans are vital to the growth of any department, as long as they share information. A twenty year veteran at a slow station is equilvelant to a two year firefighter!

32 Captain i am not being negative, but I feel the County has to do a better job tapping into the resources we have before we allow them to leave.

33 Need to put probies at busy Stations with experience Lts/FF and New Lts with experience F/F or Engs.. Now probies are put at slow stations with newly promoted Lts that have less than 6 years on. Were is the experience.

34 Very few firefighters actually step up and learned as much as possible. A good senior firefighter should have long departed with their instituational knowledge. Most rather spend time in their recliner.

35 If I can provide further detailed information concerning information listed here or for your research paper please contact me.

36 6 YRS AND A YOU CAN BE A LT. IN A HIGH RISE FIRST

DUE OR ANY OTHER? COME ON!!!!

Training is necessary to prepare firefighters for situations that could occur and also tasks that may require knowledge and specail skills. It is difficult to measure knowledge gained from experience and convert that to statistics. However first hand accounts from those that have "lived a certain situation" must be respected and valued because that is where much of our training content originates from. Unfortunately human nature is to learn by "seeing is believing'. Instructional programs that prepare teachers and instructors make reference that using all of our senses promotes better learning. There fore, if you consider the benefit of having veterin firefighters, no longer having one around could be catistropic given the right

37 situation. I hope this helps.

While SOPs pass on some of the information, stories in the station

38 pass on more information.

Knowledge passed on is sometimes out-dated or the old way of thinking that does not take into account the advances in innovation, safety culture, generation gaps, and resources. Sometimes the record of knowledge of how we got here might want to be forgotten otherwise change does not happen with an evolving system. Because that is the way "they" used to do it does not mean that is the best way to do it. This knowledge transfer needs to be of content of both good and bad and not editted by the persons who wants to tell the story so a true reflection of the events and how it affected the department good or bad is shown otherwise the knowledge is miscued and not worth the paper it is put on. How does this happen when we are too scared to call people onto the carpet and only want to reflect on their "good" things that happened during their career. You learn 90% from your mistakes in the past but who will put them

39 down and own up to them on paper.

40 You will never be CHIEF Saez

41 OCFRD Has one of the best training programs in the country. Experience is denoted by the amount and type of calls, not the total number. We loose more when we loose a person who worked the busy houses that get the good calls. Better information is given by a 15 year guy at a station like 51 than a 30 year guy who has only

42 been at houses like 31.

43 When we lose the senior personnel, whatever rank, we are losing a valuable resource. These people have alot of knowledge behind them and have learned many valuable lessons over the years the younger Firefighters have not or never will experience. This is a tremendous loss of information. If there were a way to sit and meet with these people to listen to them and retain the information we might just save a life. But most of the younger kids think they know it all and don't listen or want to hear about the old stories, so they are doomed to repeat those mistakes. I for one sat with every veteran I could and listened to how they handled themselves and what they learned over the years and it has proven significant to me as it has saved my life more than I can count.

44 Orange County has lost several "seasoned" members in the past years. Expecially in the rank of Battalion Chief. I beleive it is the inadequacy's of the Fire Chief and his Administration that has forced these "veterens" to retire before they were ready. Making room for Firefighters with little experience in the ranks of Lieutenant to be promoted to the rank of Battalion Chief. It is the leadership and skills of these retired members that will not be passed down to the younger generation firefighter. Additionally, the training division is filled with Lieutenant's that not necessarily want to be there but just want a promotion and are forced to be there. The administration makes no effort to fill these spots with highly experienced members that are willing to pass there knowledge and YEARS of experience to the younger generation. It is the attitude of the administration that as long as someone has gone through fire school than he/she is a good firefighter. Not that good on the job training and experiences make a firefighter into a great firefighter. That being said the individual firefighter does have a responsibility to get and retain his/her knowledge and expereince. But it is difficult for firefighters to have the "drive" for this knowledge when there is an administration that is working harder to force these veterens out than keeping them and retaining there knowledge. Good luck on your project.

45 I cannot answer questions 5 & 6 appropriatley because OCFRD does not and never has had a method of retaining institutional knowledge. When you are trying to change/reform the entire culture of an organization the last thing you want to do is pass on previous institutional knowlege. Hence the reason no emphasis is placed on retaining institutional knowledge in OCFRD.

46 At OCFRD, we must look for EXPERIENCE being the 1st requirement in being promoted vers "Gender" or "Race".

47 I believe that OCFRD is more based on Institutinal Memory. It is my feelings that this department is more concerned on what has happend in the past, the trying to build on the future of this organazation. It appears that the department as a whole from seasoned firefighters to the upper level managers (Chiefs) would rather take the " well that is past practice approach" other than try to make a change. That being said I believe that there comes a time in every organazation where new ideas and training come into playand should be considered.

48 We continue to re invent the wheel. 25 years is a long time and a lot of wisdom is accumulated it is a crime not to capture that knowledge and pass it on. OCFRD does an extremely poor job of capturing that information from people.

49 Great job Richard, But i think most of the knowlege is passive in nature. ie, passed on during on the job training so to speak. good luck.

50 I think OCFRD has no ways of retaining knowledge lost through retirees. Tradition is lost and it is a shame that we seem to lose our identity replacing it with one that is "the new way of doing business". Unfortunately all we have left are the memories of talking with the "old timers" to reflect on the tactical decisions made, good or bad. We are a young department comparatively and can not loose site of where we came from and those experiences and growing pains that got us to where we are.

51 As far as knowledge lost to attrition OCFRD is in a vicious cycle. Older, seasoned firefighters and officers tend to be become disgruntled and transfer out to "retirement stations" where there technical knowledge of the job is wasted. Secondly, the training officers positions always seem to go to newly promoted and often inexperienced officers, as where I believe these should be positions occupied by experienced personnel that are passionate about passing along their knowledge.

52 some emplyees are a great loss and some are just putting in the time and are no great loss

53 It is difficult to locate a particular training that you may have already done and would like to go back to it and sometimes it is deleted all together.

Appendix G

Response from Outside Fire Department Questionnaire

1.

Transfer of Knowledge - Outside Agencies

What is your tenure (years) in the fire service?		
Answer Options	**Response Percent**	**Response Count**
0 - 5	0.0%	0
6 - 10	8.1%	3
11 - 15	8.1%	3
16 - 20	37.8%	14
20 +	45.9%	17
	answered question	**37**
	skipped question	**0**

2.

At how many years do you feel a firefighter is "seasoned" or "experienced"?		
Answer Options	**Response Percent**	**Response Count**
1	0.0%	0
2	2.7%	1
3	8.1%	3
4	0.0%	0
5	40.5%	15
6	5.4%	2
7	10.8%	4
8	0.0%	0
9	0.0%	0
10	21.6%	8
11	0.0%	0
12	0.0%	0
13	0.0%	0
14	0.0%	0
15	10.8%	4
16	0.0%	0
17	0.0%	0
18	0.0%	0
19	0.0%	0
20	0.0%	0
20+	0.0%	0
	answered question	**37**

skipped question		**0**

3.

Does your department have any method of keeping institutional knowledge?

Answer Options	Response Percent	Response Count
Yes	37.8%	14
No	62.2%	23
answered question		**37**
skipped question		**0**

4.

If your department does retain institutional knowledge, please list the different methods.

Answer Options	Response Count
	14
answered question	**14**
skipped question	**23**

Number	Response Text
1	Longevity pay, record keeping, senior firefighters instructing recruits
2	Succession planning at every level
3	computer, schools attended, certificates are kept on file, etc
4	Experienced firefighters in training and company level drills
5	Many of our reference books have been updated, but, copies of the old books are kept at training. These books were created by department personnel dating back decades. Newer reference material is available to all members via intranet and disk, along with hard copy
6	Does not...
7	training
8	Training records
9	verbal, formal training processes and check offs
10	For EMS it is OTEP. (On-going Training & Education Program. This gives us our annual CME's as well as skills evaluations. For fire related skills it is not as clear. Annual mandated training does account for some retainment but I believe the quality is dependant on the skills of the company officer.
11	quarterly company officer training, monthly retiree luncheon, 4 week orientation for new hires, operational talk after action reports

	Incentive Education. Pay increase with additional schooling.
12	Access to outside training.
13	TPE's (task performance evolutions), various mandatory training in all FS fields. Not much accountability with all this, though....
14	books, computer,

5.

If your department does have methods of retaining knowledge, rate it's accessibility.

Answer Options	Response Percent	Response Count
Very Easy	13.6%	3
Easy	18.2%	4
Moderate	50.0%	11
Difficult	18.2%	4
answered question		22
skipped question		15

6.

Do you feel this retained/recorded knowledge is useful?

Answer Options	Response Percent	Response Count
Yes	91.9%	34
No	8.1%	3
answered question		37
skipped question		0

7.

When a veteran firefighter retires, how important do you feel is their loss of experience?

Answer Options	Response Percent	Response Count
No significant loss	0.0%	0
Some loss but easily replaced	29.7%	11
Difficult to replace	43.2%	16
Significant loss	27.0%	10
Other (please specify)		6
answered question		37
skipped question		0

Number	Other (please specify)

Number	Response Text
1	Many of us with 15 plus years (I have 40) have had the benefit of a lot of fires - we have had two major fires in 5 years and the firfighting experience is not as readily gained - the little voice, Tower training is nothing like going into an unfamiliiar home that working looking for someone or the fire - there is not that experince
2	It really depends on the firefighter...
3	Depends on who it is!
4	Measuring the value of an individuals Institutional knowledge when he retires has many variables. The biggest is the indiviual a life long learner? A life long learner actual has 30 years of experience or knowledge that will be lost when he retires. Or is he an individual that has one year of experience 30 times over. One is ealsy replaced without much impact to the department and teh other is a minimal loss at retirement.
5	Some is difficult to replace, other info is no so much so. Depende on who it is and what all they were "into" at work.
6	Our department is currently "experienced" as in OLD guys for the most part. In the next few years we will be losing a lot of them to retirement.

8.

If you would like to comment or add information please do so.	
Answer Options	**Response Count**
	7
answered question	**7**
skipped question	**30**

Number	Response Text
1	Good Luck !!!
2	We definitely need to have a way to formulate a plan to capture all these experiences. Now that the baby boomers are retiring who happen to be hard working individuals. We need to try and capture their experience so that we can develop the X and Y generation. Who generally want everything placed in their hand. We need to develop a program where the season veteran mentors the younger firefighter and makes sure that they capture some of that expierience. It will be a long road to develop but we must start somewhere.
3	Forget the lessons of history and you are doomed to failure.
4	Please pass the results along when finished. Good luck Rich, see you in March!
5	no

	Certain positions require knowledge that is very difficult to replace. It is easy to replace a excellent Driver/Operator because you can train to a standard and it is well documented how to do so. It is much more difficult to replace an Officer who knows the interworkings in the city and how to get things done working with other departments or agencies. The only way to get the required knowledge is to do the job and that takes time. The farther you go up the rank structure the more difficult it is to get the experience you need. Red carding is a good example. Train a firefighter to S 130 and S 190 and they are a FF2. You cannot do
6	that with a Division Supervisor.
	A peer training program in any department would be of great benefit to the younger FF's. It's hard to "assign" or order an older
7	FF to share his knowledge with the rookies.